IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	10/572,718	Confirmation No.	:	4614

Applicant : Yoshiyasu FUJIWARA

Filed : March 21, 2006

Title : **Method of Diagnosing System, Method of Operating Aggregating System for System Diagnosis, and Aggregating System for System Diagnosis**

Group Art Unit : 4154

Examiner : Manko CHEUNG

Customer No. : 28289

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Commissioner for Patents
P. O. Box 1450
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

For the reasons set forth herein, Applicant respectfully submits that the Final Office Action, dated January 6, 2010 is based upon improper rejections of the claims in that the applied prior art fails to render obvious the pending claims. The instant Pre-Appeal Brief Request for Review is based on pending claims 1-9, as last submitted on August 12, 2009. A Notice of Appeal and one-month Petition for Extension of Time accompany this Request.

I hereby certify that this correspondence is being electronically submitted to the United States Patent and Trademark Office on May 3, 2010.

Lisa A. Miller
(Name of Person Submitting Paper)

Signature   5/3/2010
                                                      Date

Rejection of independent claims 1, 4, 5, 7, 8 under 35 U.S.C. §103 for obviousness as follows:

> **Claims 1 and 4** – U.S. Pat. App. Pub. No. 2002/0052716 to Fujiwara ("Fujiwara") in view of U.S. Pat. App. Pub. No. 2002/0153004 to Agata ("Agata")
>
> **Claims 5** – Fujiwara in view of Agata and further in view of WO 02/066950 to Nagase ("Nagase")
>
> **Claim 7** – Fujiwara
>
> **Claim 8** – Fujiwara in view of Nagase .

I.   The Fujiwara or Agata references, alone, or in combination with each other or other references fail to anticipate each and every limitation of claims 1, 4, 5, 7, and 8.

Of note, on page 20 of the final Office Action, the Examiner asserts that the limitation "ratio of steam loss reduction" is not presented in any of the independent claims. However, the independent claims do in fact contain limitations directed to a "ratio of steam loss reduction." Specifically, the "improvable unknown steam ratio (Kts)", the combination of "unknown steam ratio (Kx) and improved unknown steam ratio (Kxx)" and the combination of "unknown steam ratio (Kx) and apparent improved unknown steam ratio (Kxx')" all represent the "ratio of steam loss reduction" obtained by the claimed predetermined system improvement. The relationships among the ratios is defined in the specification and explicitly set forth on page 23 of Applicant's response dated August 12, 2009. The independent claims recite the above-variables "Kts", "Kx and Kxx", and "Kx and Kxx'". Accordingly, the independent claims set forth the "ratio of loss reduction."

At the bottom of page 4 to the top of page 5 of the final Office Action, the Examiner asserts that "Fujiwara does not disclose the step of obtaining a ratio of said improvable steam loss amount relative to the total unknown steam amount...", and implies that the teachings of Agata combined with that of Fujiwara discloses this claimed aspect. Specifically, the Examiner makes three assertions that Applicant respectfully submits are erroneous. The Examiner asserts that the output ratio disclosed by Agata "is the relationship between the steam generated by the solar thermal collector and the steam used by the heat exchangers"; that Agata discloses that "the ratio of generated and used steam could be found"; and that Agata discloses the "total unknown steam amount". However, the "output ratio" disclosed in Agata is the ratio (output ratio) between the output of the heat exchanger 22 and the output of the heat exchanger 26 in Fig. 3. Therefore, based on this "output ratio" (the ratio between the output of the heat exchanger 22 and the output of the heat exchanger 26), one could not have obtained the ratio of generated and used steam. Applicant

acknowledges that once the ratio of generated and used steam (the ratio between the total receiving steam amount Qi and the total necessary steam amount Qo) is known, there might be an indication of the total unknown steam amount Qx in terms of a ratio. However, because the "output ratio" disclosed in Agata does not represent the ratio of generated and used steam (the ratio between the total receiving steam amount Qi and the total necessary steam amount Qo), as discussed above, this "output ratio" disclosed in Agata does not disclose, teach, or suggest the total unknown steam amount Qx.

Agata (*See* Fig. 4, S1) discloses calculation of the used steam amount (total necessary steam amount Qo) and Agata (Fig. 4, 82) discloses calculation of the generated steam amount (total receiving steam amount Qi). The difference between the calculated generated steam amount and the calculated used steam amount can be obtained by simply subtracting the associated values. However, Agata fails to disclose the calculation of finding the difference between the calculated generated steam amount and used steam amount (the difference between the total receiving steam amount Qi and the total necessary steam amount Qo). Agata completely fails to disclose, from the beginning to the end of the method set forth in FIG. 4 thereof, the concept of obtaining the steam loss (total unknown steam amount Qx) of the system, which desirably is to be made zero. Thus, contrary to the Examiner's assertion, Agata does not disclose the "total unknown steam amount Qx." Of note, the mere readiness of the calculation of the difference between the generated steam amount and the used steam amount does not teach the aspect of calculating the "total unknown steam amount Qx", either.

Fujiwara only suggests the "reduction amount of steam loss" (i.e., the steam loss amount Qt (kg/h) obtainable by a predetermined system improvement). Similar to Agata, Fujiwara also lacks the disclosure of the concept of obtaining the difference between the generated steam amount and the used steam amount (the steam loss amount which desirably is to be made zero, namely, the total unknown steam amount Qx).

A discussed above, neither Agata nor Fujiwara disclose, teach, or suggest the calculation of "the total unknown steam amount Qx". The "total unknown steam amount Qx" includes a steam loss which can be solved by a predetermined system improvement (total improvable steam amount) and a steam loss which cannot be solved by a predetermined system improvement (total basis unknown steam amount Qxx) and the ratio between the "total unknown steam amount Qx" and the "reduction amount of steam loss (Qx - Qxx) obtained by the predetermined system improvement" is the above-described "ratio of loss

reduction" (ratio represented by "Kts", "Kx and Kxx" and "Kx and Kxx'"). However, since neither Agata nor Fujiwara teach the calculation of "the total unknown steam amount Qx", Agata and Fujiwara cannot teach the claimed "ratio of loss reduction" (ratio represented by "Kts" or "Kx and Kxx" or "Kx and Kxx'", as discussed above).

On page 21 of the final Office Action, the Examiner asserts that "[k]nowing the difference [between the generated steam amount and the used steam amount] would allow an operator to generate a minimum steam amount that an apparatus used. As such, avoiding excessive steams being generated, thus saves money." Applicants respectfully submit that the Examiner's understanding is erroneous. Specifically, the equilibrium condition prior to implementation of predetermined system improvement is:

total receiving steam amount Qi = total unknown steam amount Qx + total necessary steam amount Qo.

Under this equilibrium condition, the total unknown steam amount Qx (= Qi - Qo), which is the difference between the total receiving steam amount Qi and the total necessary steam amount Qo, is obtained. Even if the total receiving steam amount Qi is reduced to the minimum amount used by the apparatus, based on this difference, no reduction will be obtained in the total unknown steam amount Qx unless the predetermined system improvement is implemented. As a result, steam shortage corresponding to the total unknown steam amount Qx will occur, so that the apparatus cannot perform its predetermined function.

Agata discloses the decision step (*See* S7, FIG. 4) of "steam distributed ≥ steam used?" This aspect judges whether each heat exchanger 22, 26 is under its appropriately controlled condition or not (i.e., under the condition of the distribution amount of steam being greater than or equal to its used amount). In other words, for each heat exchanger 22, 26, the condition of the used amount of steam being greater than its distribution amount (distribution amount < used amount) is an unrealistic situation due to the impossible income and expenditure of steam amount. Therefore, when it is decided that distribution amount < used amount, the process determines that a condition has occurred requiring some control measure (i.e., occurrence of inappropriately controlled condition). Thus, it can be seen that Agata's decision aspect (S7, Fig. 4) "steam distributed ≥ steam used?" does not anticipate the calculation of the "total unknown steam amount Qx".

II.   Conclusion

In view of the foregoing, Applicants respectfully request withdrawal of the rejections of the final Office Action and allowance of the independent claims 1, 4, 5, 7, and 8 and the claims depending therefrom. Any questions regarding this submission should be directed to Applicant's undersigned representative, who can be reached by telephone at 412-471-8815.

Applicant hereby encloses the $65.00 one-month Petition for Extension of Time fee and the $270.00 Notice of Appeal fee. However, the Commissioner for Patents is hereby authorized to charge any additional fees which may be required to Deposit Account No. 23-0650. Please refund any overpayment to Deposit Account No. 23-0650.

Respectfully submitted,

THE WEBB LAW FIRM

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